

Section 303. OPEN-GRADED DRAINAGE COURSES

303.01 Description. Construct an open-graded drainage course (OGDC) on an approved surface.

303.02 Materials. Materials shall meet the following requirements.

Open-Graded Aggregate 4G 902

303.03 Construction.

A. **Preparation.** The plans will specify the type of separation treatment required between the OGDC and the subbase.

B. **Placement and Compaction.** The open-graded aggregate shall be placed according to subsection 302.03 except for the density requirements. Compact the open-graded aggregate with three passes of a steel drum tandem, minimum 10 ton roller. One complete pass will be down and back in the same path.

The surface of the OGDC shall be finished to the specified thickness, grade, and cross-section within a tolerance of $\frac{3}{4}$ inch. The finished surface shall be smooth and uniform in appearance, and be free of loose aggregate, holes, depressions, ruts and ridges.

C. **Equipment Travel.** Do not use OGDC for travel as a hauling route for construction equipment and vehicles, except as described herein. The only acceptable travel is for ramp/gore areas, when no alternate route exists, and during concrete placement. During concrete placement, only the paving equipment may travel continuously on the OGDC. The concrete hauling units shall only enter and exit the OGDC directly in front of the paving equipment. Any observed degradation to the OGDC from travel shall be investigated and corrected as specified in subsection 303.03.E.2 The underdrain system shall be protected from damage at all entry and exit points.

D. **Season Shutdown.** OGDC that is completed and allowed to remain uncovered during seasonal shutdown will be inspected for approval by the Engineer when construction resumes. If needed, additional 4G aggregate shall be spread, compacted and trimmed over the previously placed OGDC to meet specifications.

E. Testing and Acceptance.

1. **Test Strip.** The Contractor shall construct a minimum 600 foot long control strip of OGDC at the start of the spreading operation to establish a construction method for placement and compaction that does not cause degradation or segregation detrimental to base stability and/or drainability. The Engineer may at any time instruct the Contractor to construct another control strip to re-establish placement and compaction methods, if the OGDC does not meet specifications.

2. **In-Place Acceptance Criteria.** The Engineer may sample, test and accept the OGDC in-place for stability and gradation when either segregation or degradation has been observed. Stability is acceptable if compaction has achieved a minimum average value

of 95 percent of maximum density when tested at the aggregate's optimum moisture content. The Engineer will determine the size of the test area for density testing, which shall not exceed 500 feet in length.

For gradation the Engineer will obtain at least three random samples from the area in question. The Engineer will determine the size of the sample area, which shall not exceed 500 feet. To be acceptable, the gradation of each sample must meet the specified 4G gradation and the test results among the samples must not vary by more than 5 percent on any one sieve.

Any area of OGDC not meeting either of these specification requirements shall be removed and replaced at the Contractor's expense.

303.04 Measurement and Payment.

Contract Item (Pay Item)	Pay Unit
Open-Graded Dr Course, __ inch	Square Yard
Open-Graded Dr Course, CIP	Cubic Yard

- A. **Open-Graded Dr Course, __ inch** will be measured according to the methods in section 302. Payment includes furnishing the crushed aggregate, placing, spreading, shaping, compacting, and protecting the OGDC.
- B. **Open-Graded Dr Course, CIP** will be measured based on plan quantity by volume in cubic yards. The plan quantity will include all the OGDC below the concrete shoulder and concrete median to the top of the proposed subbase, as defined by the plan typical sections. If the Engineer determines that it is not feasible to determine quantities based on plan quantities, measurement for **Open-Graded Dr Course, CIP** will be based on the staked-section method as described for Roadway Earthwork in subsection 205.04.
- C. When the pay item **Open-Graded Dr Course, CIP** is not included, payment shall be included in the pay item for **Open-Graded Dr Course, __ inch**.